To notify the community about a colleague's death, subscribers can visit http://www.physicstoday.org/obituaries, where they can submit obituaries (up to 750 words), comments, and reminiscences. Each month recently posted material will be summarized here, in print. Select online obituaries will later appear in print.

# George Dionisios Dracoulis

Nuclear physicist George Dionisios Dracoulis had a vibrant and charismatic personality. As a meticulous researcher, he was known for the reliability of his results—if George had measured it, then you knew it was right. And he took his wit and wisdom outside the laboratory when he served as a respected science adviser to the Australian government. He passed away at home in Canberra, Australia, on 19 June 2014 after a short battle with cancer.

Born in Melbourne, Australia, on 19 December 1944, George pursued his undergraduate and postgraduate studies at the University of Melbourne, from which he received a PhD in nuclear physics in 1970. After a three-year postdoctoral research position at the University of Manchester in the UK, he returned to Australia to take a research position at the Australian National University in Canberra, where the world's largest tandem Van de Graaff heavy-ion accelerator was under construction. George played an integral, and soon leading, role in the accelerator's development and exploitation as a research facility. As head of the university's department of nuclear physics from 1992 until his retirement in 2009, he established it as one of the most respected nuclear-physics laboratories in the world.

George Dionisios Dracoulis

In retirement, George continued as an indefatigable researcher. He traveled the world to perform experiments and speak at conferences until diagnosed with kidney cancer in March of this year. In addition to having a network of friends and colleagues around the globe, George enjoyed extended visits to Stony Brook University in New York, Argonne National Laboratory in Illinois, Lawrence Berkeley National Laboratory in California, and the University of Surrey in the UK.

George made seminal contributions to the understanding of nuclear structure: the way different nuclear shapes can coexist; the way nuclear vibrations, especially octupole vibrations, can couple to neutron and proton excitations; and the way metastable excited states, or isomers, can be used to probe nuclear spin and shape properties. He was renowned for the thoroughness of his experimental approach, which he combined with a deep physical understanding of nuclear phenomena.

Among the numerous awards George received were the Australian Academy of Science's 2003 Thomas Ranken Lyle Medal for outstanding contributions to our understanding of the structure of atomic nuclei and the Australian Institute of Physics' 2004 Walter Boas Medal for excellence in physics research.

George served as a member of the Australian Prime Minister's Select Task Force on Uranium Mining, Processing and Nuclear Energy in 2006. As professor emeritus, he remained active in public education and continued to engage with the media and in the public discussion of nuclear energy and nuclear technology. George also continued his nuclear-physics research work until only a few weeks before he died.

George will be greatly missed by his family, friends, and colleagues around the world.

**Philip Walker**
*University of Surrey*
*Guildford, UK*
**Andrew Stuchbery**
*Australian National University*
*Canberra*
**Filip Kondev**
*Argonne National Laboratory*
*Argonne, Illinois*

**Recently posted notices at http://www.physicstoday.org/obituaries:**

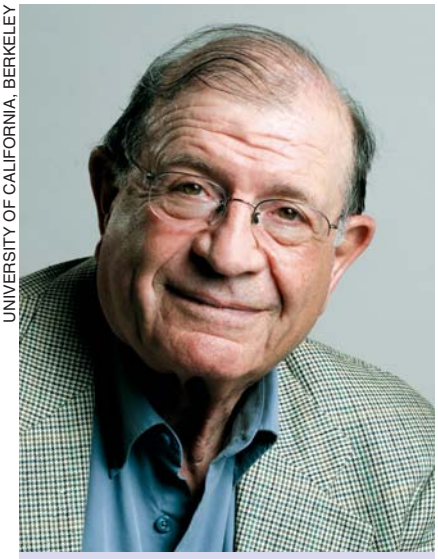
Jerome Lewis Duggan
4 August 1933 – 31 August 2014
Walter E. Thirring
29 April 1927 – 18 August 2014
John Paul Carrico Sr
26 June 1938 – 31 July 2014
John McKeen McKinley
2 February 1930 – 25 July 2014
Gunther Klaus Wertheim
26 February 1927 – 14 July 2014
Thomas Fields
23 October 1930 – 27 June 2014
Johan de Swart
31 January 1931 – 10 June 2014
Nina Byers
19 January 1930 – 5 June 2014
Frank H. Low
1928 – 13 March 2014
Dwight L. Parry
3 June 1933 – 20 January 2014

# Ivan Paul Kaminow

Ivan Paul Kaminow, a luminary in the photonics community, passed away in San Francisco on 18 December 2013. For more than 50 years he had been at the forefront of light-wave-technology research that helped bring about a telecommunications revolution. His contributions are evident in the ongoing activities done by the researchers, engineers, and companies working in the field.

Born on 3 March 1930 in Union City, New Jersey, Ivan received his BS in electrical engineering from Union College in 1952. After earning his MS, also in engineering, from UCLA in 1954, he began a 42-year career at Bell Labs. He earned a PhD from Harvard University in 1960; his thesis, under C. Lester Hogan and later R. Victor Jones, was on ferromagnetic resonance at microwave frequencies and high pressures.

Perhaps Ivan's greatest technical legacy from his tenure at Bell Labs is the electro-optic modulator and its materials. His contributions also included creating titanium-diffused lithium niobate modulators and other integrated optics, developing birefringent optical fibers, analyzing Raman scattering in ferroelectrics, and demonstrating such semiconductor laser technologies as the distributed Bragg reflector and the ridge waveguide. Beginning in 1984 Ivan led the photonic networks and components


UNIVERSITY OF CALIFORNIA, BERKELEY

**Ivan Paul Kaminow**

research department. He and his team worked on wavelength-division-multiplexed local- and wide-area networks and on such components as a fiber Fabry–Perot resonator, an arrayed waveguide grating router, and an erbium-doped fiber amplifier.

Among Ivan's best-known books are *An Introduction to Electrooptic Devices* (Academic Press, 1974) and the second through sixth editions in the Optical Fiber Telecommunications series (Academic Press/Elsevier, 1988–2013). The OFT series has chronicled the exciting evolution of the field of optical-fiber communications by the R&D community. Working on the editions brought Ivan great joy, and it enabled him to use his love and skill for writing, help explore the most significant technical issues, and interact with the best people in the field. The book series itself is a tribute to his effort, leadership, wisdom, and insight. In fact, the sixth edition was his last publication. Ivan coedited three of the books with another luminary, Tingye Li. They were lifelong friends and colleagues and shared much affection and admiration for each other.

Ivan received many awards for his contributions to photonics, including the 1995 Charles Hard Townes Award and the 2011 Frederic Ives Medal from the Optical Society (OSA), the 2010 Photonics Award and the 2013 Edison Medal from the IEEE, and the 1997 John Tyndall Award from IEEE/OSA.

After he retired from Bell Labs, Ivan served as an IEEE congressional fellow in 1996, and in 1999 he was a senior science adviser to OSA. He enjoyed his last years living in San Francisco with his wife, Florence, and being an adjunct professor at the University of California, Berkeley, where he took great pleasure interacting with the many bright, curious, and friendly students.

When reflecting on his career, Ivan considered himself very lucky to have been at Bell Labs during its heyday. He was fond of saying, "Over the years, I have benefited from many happy coincidences and lucky choices. Indeed, luck plays an important part in any career. Still, luck is not enough. I had to be in the right places at the right times in order to have a chance to seize these opportunities. As the old saying goes, It takes luck and pluck."

It was always refreshing listening to Ivan; he had a unique and insightful way of understating things. Many people were fortunate to be able to learn from his wisdom and to interact with him personally.

In addition to Ivan's illustrious career, his leadership, vision, gentleness, inquisitiveness, love of learning and teaching, and intellectual honesty were hallmarks of his personality. They will be most remembered by his friends and colleagues, who miss him greatly. His contributions to the optical-fiber communications community and technical field were monumental and will not be forgotten.

**Connie Chang-Hasnain**
*University of California, Berkeley*
**Alan E. Willner**
*University of Southern California*
*Los Angeles*

# John Gordon King

A passion for hands-on discovery marked the life of MIT physics professor emeritus John Gordon King, an imaginative experimental physicist and transformative physics educator. King is best known for his work with electricity and magnetism and for mentoring hundreds of students throughout his more than half-century career at MIT's Molecular Beam Laboratory. He died at his summer home in Wellfleet, Massachusetts, on 15 June 2014.

King was born in London on 13 August 1925 and was educated in France, Switzerland, and the US. After serving in World War II, principally through the US Navy as a radio specialist in Harvard University's Underwater Sound Laboratory, he went to study at MIT. He received his bachelor's degree in 1950 and his PhD in 1953, both in physics. King joined the MIT faculty upon graduation and ran the freshman physics lab, which helped shape many of his ideas for inspiring young students. He was named Francis L. Friedman Professor of Physics in 1974 and retired in 1996.

As a doctoral student of Jerrold Zacharias, who began MIT's Molecular Beam Laboratory, King measured the electric and magnetic multipole moments of atomic nuclei. He and Vincent Jaccarino discovered the magnetic octupole moment of iodine-127 in groundbreaking work in which they applied the precise and elegant molecular-beam techniques to the halogens. He also helped develop the atomic clock based on the hyperfine structure of cesium-133, converting a laboratory experiment into a commercial and reliable instrument that has become the universal time standard.

In the early 1960s, King became head of the Molecular Beam Laboratory. Committed to the interconnectivity of disciplines, he expanded the scope of the lab's research to include cosmology, low-temperature physics, and biophysics. During his tenure, more than 100 undergraduate and 25 doctoral students earned degrees in those fields.

King is best known for his 1960 measurement of the charge magnitude equality of the electron and the proton and the neutrality of the neutron to $10^{-20}$ of an electron charge. That experiment, which still graces the first page of most electricity and magnetism textbooks, had been prompted by a conjecture that the expansion of the universe was due to a slight charge imbalance.

Combining cryogenic and molecular-beam techniques, in the late 1960s and early 1970s, King developed a series of experiments to explore the fundamental properties of superfluid helium by observing variations in evaporation and scattering behavior. An interest in pursuing the limits of microscopy led him to conduct theoretical and experimental studies to improve the resolution of electron microscopy to atomic dimensions. King branched into biophysics with his invention of a molecular microscope; for the illuminating projectile, he used water molecules rather than light.

King was deeply committed to improving science education at the high school and college levels. In the 1960s he worked with the influential Physical Science Study Committee, for which he produced and acted in eight movies, including *Time and Clocks* and *Interference of Photons*. In one film, King demon-